TETRA TECH

May 8, 2017

Ms. Susan Fisher
On-Scene Coordinator
U.S. Environmental Protection Agency – TLC
8600 NE Underground Drive, Pillar 253
Kansas City, Missouri 64161

Subject: Quality Assurance Project Plan, Addendum No. 1
US Recycling LLC Site, Ogallala, Nebraska
U.S. EPA Region 7, START 4, Contract No. EP-S7-13-06, Task Order No. 0174
Task Monitor: Susan Fisher, On Scene Coordinator

Dear Ms. Fisher:

Tetra Tech, Inc. is submitting the attached Addendum No. 1 to the Quality Assurance Project Plan (QAPP) for the US Recycling LLC site in Ogallala, Nebraska. If you have any questions or comments, please contact the Project Manager at (816) 412-1761.

Sincerely,

Nick Patch
START Project Manager

Ted Faile, PG, CHMM
START Program Manager

Enclosures

cc Debra Dorsey, START Project Officer (cover letter only)

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QUALITY ASSURANCE PROJECT PLAN ADDENDUM NO. 1
US RECYCLING LLC SITE
OGALLALA, KIETH COUNTY, NEBRASKA
Task Order No. 0174

This document is an addendum to the Quality Assurance Project Plan (QAPP) dated January 13, 2017, for the US Recycling LLC site in Ogallala, Nebraska (Tetra Tech, Inc. [Tetra Tech] 2017). The primary purpose of this Removal Assessment (RA) was to determine the nature and general extent of contamination in groundwater and soil that may present a threat to human health and the environment. Additionally, the RA was to identify additional sources and potentially responsible parties (PRP) that may have contributed to the known trichloroethene (TCE) plume at Operating Unit (OU) 1. This investigation will proceed under authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA).

The approved QAPP dated January 13, 2017, called for sampling soil, soil gas, and groundwater from temporary direct-push technology (DPT) wells. The QAPP also specified appropriate sampling procedures and analytical methods to quantify volatile organic compounds (VOC) in each of the three media. The Tetra Tech Superfund Technical Assessment and Response Team (START) and the U.S. Environmental Protection Agency (EPA) conducted the sampling during the week of March 12, 2017. A total of 102 groundwater samples were collected from 30 DPT wells and three private wells; 67 soil samples at 35 locations (28 duplicate samples were sent to a commercial laboratory); and 47 soil gas samples at 47 locations. Sampling of private wells was not specified in the QAPP, however a concerned citizen requested that the EPA team do so.

The groundwater samples were conveyed to the EPA Region 7 fixed laboratory under Analytical Services Request (ASR) 7417 to be analyzed for VOCs. Soil and soil gas samples were analyzed for tetrachloroethene (PCE), trichloroethene (TCE), *cis*-1,2-dichloroethene (DCE), and carbon tetrachloride (CT) by the EPA Region 7 mobile laboratory. The subset of duplicate soil samples was sent to a commercial lab and analyzed for VOCs.

Three possible additional sources to the OU1 plume were identified (Appendix A, Figure 1). The first of the three sources is at 413 West 1st Street at 41.12453º North and 101.72333º West, the location of Humphrey's Auto Supply Inc. (Humphrey Auto), which Stantec, Inc. previously had identified as a possible source area of TCE (Stantec, Inc. 2008). The second possible source is the US Recycling facility because soil and soil gas samples collected in the vicinity of 41.124538° North and 101.713401° West longitude were found to contain elevated TCE concentrations. The third possible source is a suspected

former dump site in the vicinity of 41.134318° North and 101.739250° West—indicated by a citizen who approached the START team and EPA personnel during the March field sampling. According to this person, dumping had occurred at this location by various operators of an electronics manufacturing plant at 301 West O Street, in the vicinity of 41.124491° North and 101.736302° West. The plant is currently operated by American ShiZuki Corporation (ASC), the settling defendants in the OU1 Consent Decree.

EPA requires collection of additional groundwater samples (from as many as 23 DPT temporary wells) to undergo analysis for VOCs and Compound Specific Isotope Analysis (CSIA). EPA has utilized CSIA to identify different isotopic signatures of chlorinated solvents such as TCE from different sources (EPA 2008). CSIA also can distinguish between an additional source and just an anomalously high concentration of a contaminant. Sampling for both VOCs analysis and CSIA will occur at US Recycling and Humphrey Auto. Sampling for VOCs will occur near ASC and downgradient of the suspected dump site; if TCE is detected in samples from any of these sites, CSIA of remaining groundwater in those TCE-containing samples will occur to identify isotopic signature(s) of detected TCE.

Groundwater Sampling Procedures

Tetra Tech proposes to advance 23 DPT temporary wells for groundwater sampling. Samples will be collected at DPT borings in five areas (Appendix A, Figure 2):

- Downgradient of the suspected dump site
- Downgradient of and near ASC
- Between ASC and Humphrey Auto
- Upgradient and downgradient of Humphrey Auto
- Upgradient and downgradient of US Recycling.

The locations were selected by the START Project Manager based on evaluation of available OU1 data, goals specified by the EPA On-scene Coordinator (OSC), and capabilities and limitations of CSIA.

EPA will collect groundwater samples within as many as four depth intervals at each of the 23 DPT temporary wells. Historically, less than 50% of DPT borings have penetrated a hard caliche layer 45-50 feet below ground surface (bgs). Based on this boring success rate, collection of as many as 75 groundwater samples is anticipated. At borings where the caliche is not penetrated, samples will be collected within 24-28 and 40-44 feet bgs. At borings where the caliche is penetrated, additional samples will be collected within 60-64 and 80-84 feet bgs.

Samples from the temporary wells will be collected by use of a Geoprobe® Screen Point 16 sampling apparatus containing either disposable, 4-foot-long, polyvinyl chloride (PVC) screens or a Geoprobe® reusable stainless steel screen. At each location, the sampler will be advanced to the maximum sampling depth (e.g., 84 feet bgs); then the screen will be exposed to the aquifer at the first sampling interval (e.g., 80-84 feet bgs). A check valve will be placed at the end of disposable polyethylene tubing lowered down the hole. A sample will be collected after purge of approximately 1 gallon of water. The rod string will then be lifted to the next lowest sampling interval (e.g., 60-64 ft bgs), and the screen and tubing will be purged with groundwater from the second interval prior to sampling. The procedure will be repeated within the remaining sampling intervals (40-44 and 24-28 ft bgs). For the CSIA and VOC method, twelve 40-milliliter (mL) vials preserved with hydrochloric acid (HCl) will be collected within each sampling interval. The groundwater sampler and rods will be decontaminated following sampling at each well, and new tubing will be used at each well location. Approximately 75 groundwater samples (excluding background and quality control [QC]) from 23 temporary wells will be submitted to the laboratory for analysis for VOCs. Based on results of VOC analysis, a subset of these will also undergo CSIA. Selection of those samples to undergo CSIA will be based on professional judgment of the Project Manager and OSC, and recommendation of laboratory analysts. Both the VOC and CSIA will be conducted by Pace Analytical Energy Services.

For each DPT sample location, the address (where applicable), location identification number, sample depth interval, date, and time will be recorded on the Collector Application and the field logbook. After completion of sampling, all DPT boreholes will be plugged with bentonite from the bottom of the hole to ground surface. Any disturbance to surface materials (concrete or asphalt) will be patched with appropriate material.

Quality Control Samples

To evaluate sample QC, three field duplicates, one field blank, and one rinsate blank will be collected, as specified in Section 2.5 of the QAPP form. One laboratory-prepared trip blank will be submitted per sample cooler shipped to the laboratory to evaluate contamination that possibly will have been introduced during transportation of the containers and samples.

Table 1 below is a sample summary, and Table 2 specifies data quality objectives.

Nick Patch, START Project Manager	5/8/17 Date
Ted Faile, PG, CHMM, START Program Manager	5/8/17 Date
for Kathleen Homer, START Quality Assurance Manager	5/8/17 Date
Susan Fisher, EPA Region 7 On-scene Coordinator	Date
Diane Harris, EPA Region 7, Quality Assurance Manager	Date

Region 7 Superfund Program Addendum to the Generic QAPP for Superfund Site Assessment and Targeted Brownfields Assessment Activities (October 2012) for the Allied Systems Site							
Table 1: Sample Summary							
Site Name: Allied Systems Site				**Location:** Kansas City, Kansas			
START Project Manager: Nick Patch				**Activity/ASR #:** Environmental Sampling		**Date:** May 2017	
No. of Samples	**Matrix**	**Location**	**Purpose**	**Depth or other Descriptor**	**Requested Analysis**	**Sampling Method**	**Analytical Method/SOP**
75	Groundwater	On-site Geoprobe temporary wells	To identify source areas and extent of site-related contamination	23 borings, as many as four depth intervals per boring	VOCs: PCE, TCE, *cis*- and *trans*-1,2-DCE, vinyl chloride, BTEX	SOPs 4230.07 & 4231.2007	8260
15	Groundwater	On-site Geoprobe temporary wells	To differentiate multiple sources of TCE within the known plume	A subset of the above samples	Compound Specific Isotope Analysis	SOPs 4230.07 & 4231.2007	Pace Analytical Energy Services SOP AM24
QC Samples							
1	Water	Equipment rinsate blank	To evaluate effectiveness of decontamination procedures for Geoprobe sampling equipment	N/A	VOCs: PCE, TCE, *cis*- and *trans*-1,2-DCE, vinyl chloride, BTEX	N/A	8260
1	Water	Trip blank	To assess transportation-related contamination	N/A	VOCs: PCE, TCE, *cis*- and *trans*-1,2-DCE, vinyl chloride, BTEX	N/A	8260
3	Water	Field Duplicate	To evaluate consistency in sample collection methods.	N/A	VOCs: PCE, TCE, *cis*- and *trans*-1,2-DCE, vinyl chloride, BTEX	SOPs 4230.07 & 4231.2007	8260

Notes:

ASR Analytical Services Request
BTEX Benzene, toluene, ethylbenzene, and xylenes
DCE Dichloroethene
EPA U.S. Environmental Protection Agency
N/A Not applicable
PCE Tetrachloroethene
QAPP Quality assurance project plan
QC Quality control
SOP Standard operating procedure
START Superfund Technical Assessment and Response Team
TCE Trichloroethene
VOC Volatile organic compound

Region 7 Superfund Program Addendum to the Generic QAPP for Superfund Site Assessment and Targeted Brownfields Assessment Activities (October 2012) for the Allied Systems Site								
Table 2: Data Quality Objective Summary								
Site Name: Allied Systems Site				**Location:** Kansas City, Kansas				
START Project Manager: Nick Patch				**Activity/ASR #:** Environmental Sampling			**Date:** May 2017	
Analysis	**Analytical Method**	**Data Quality Measurements**					**Sample Handling Procedures**	**Data Management Procedures**
		Accuracy	**Precision**	**Representativeness**	**Completeness**	**Comparability**		
Groundwater								
VOCs: PCE, TCE, *cis*- and *trans*-1,2-DCE, vinyl chloride, BTEX	See Table 1	Per analytical method	Per analytical method	Judgmental sampling based on professional judgment of the sampling team	100%; no critical samples have been identified	Standardized procedures for sample collection and analysis will be used.	See Section 2.3 of QAPP form.	See Section 2.10 of QAPP form.
Compound Specific Isotope Analysis	See Table 1	Per analytical method	Per analytical method	Judgmental sampling based on professional judgment of the sampling team	100%; no critical samples have been identified	Standardized procedures for sample collection and analysis will be used.	See Section 2.3 of QAPP form.	See Section 2.10 of QAPP form.

Notes:

ASR Analytical Services Request
BTEX Benzene, toluene, ethylbenzene, and xylenes
DCE Dichloroethene
PCE Tetrachloroethene
QAPP Quality assurance project plan
START Superfund Technical Assessment and Response Team
TCE Trichloroethene
VOC Volatile organic compound

REFERENCES

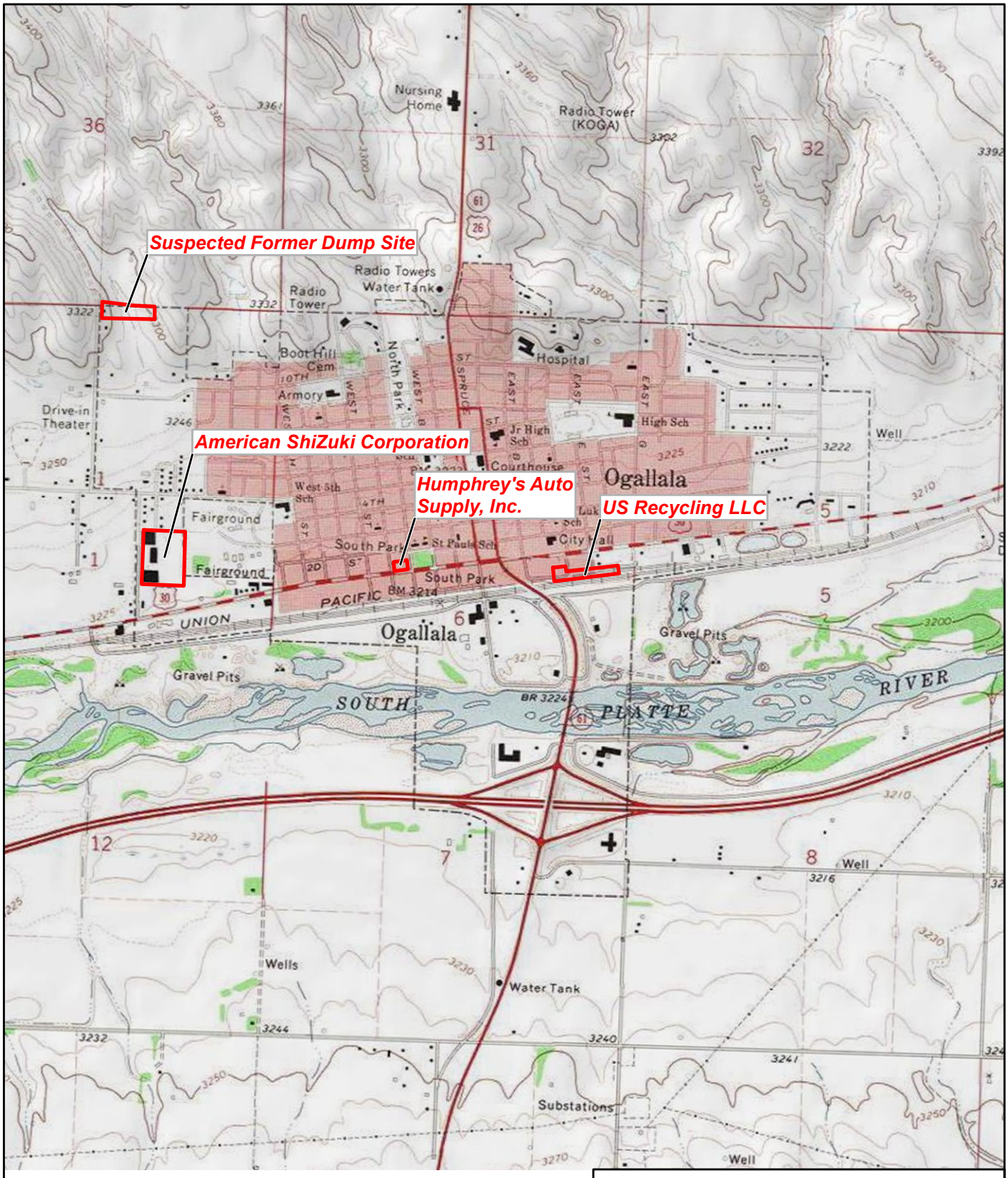
Stantec, Inc. 2008. "Additional In Situ Chemical Oxidation (ISCO) Pilot Test Performance Evaluation Report, Ogallala Ground Water Contamination Site, Ogallala, Nebraska." August 26.

Tetra Tech, Inc. (Tetra Tech). 2017. Quality Assurance Project Plan for Integrated Site Assessment, US Recycling LLC Site, Ogallala, Keith County, Nebraska. January 13.

U.S. Environmental Protection Agency (EPA). 2008. A Guide for Assessing Biodegradation and Source Identification of Organic Ground Water Contaminants using Compound Specific Isotope Analysis (CSIA).

APPENDIX A

FIGURES



Source: USGS Ogallala, NE 7.5 Minute Topo Quad, 1971; USGS Ogallala SW, NE 7.5 Minute Topo Quad, 1971; USGS Brule NE, NE 7.5 Minute Topo Quad, 1971; USGS Brule SE, NE 7.5 Minute Topo Quad, 1961

US Recycling LLC
Ogallala, Nebraska

Figure 1
Site Location Map

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Date: 4/20/2017 Drawn By: Nick Wiederholt Project No: X9025.17.0174.000

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Suspected Former Dump Site

American ShiZuki Corporation

Humphrey's Auto Supply, Inc.

US Recycling LLC

GPW-33
GPW-32
GPW-34
GPW-49
GPW-31
GPW-36
GPW-48
GPW-37
GPW-52
GPW-53
GPW-43
GPW-41
GPW-39
GPW-42
GPW-47
GPW-44
GPW-46
GPW-12
GPW-40
GPW-24
GPW-19
GPW-16
GPW-17

W 11th St
Foxhill Rd
Parkhill Dr
W 10th St
W 9th St
W 8th St
W 7th St
W 6th St
W 5th St
W 4th St
W 3rd St
W 2nd St
W 1st St
Ethel Ave
Robin Ln
St Marys Ave
W Lawn Dr
Platte View Dr
W P St
W O St
W N St
W M St
W L St
W K St
W J St
W F St
W C St
W B St
W A St
W E St
W H St
W I St
S Hillcrest Dr
E 11th St
E 10th St
E 9th St
E 8th St
E 7th St
E 6th St
E 5th St
E 4th St
E 3rd St
E 2nd St
E 1st St
E A St
E B St
E C St
E D St
E E St
E F St
E G St
E H St
E I St
Beal St
Adams Cir
Adams Dr
Valley View Dr
Valley View Dr St
Pomrose Dr
Central Dr
Highland Dr
Student Dr
Ellwood Dr
Opal St
E Railroad St
W Railroad St
S Spruce St
Riverdale Dr
30
26

Legend

- Proposed DPT groundwater sample location
- State highway
- Major road
- Street
- Ramp
- Union Pacific Railroad
- Area of interest
- DPT Direct push technology

N

0 275 550

Feet

Source: The source of this map image is ESRI, used by EPA with ESRI's permission; HSIP Gold, 2007

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US Recycling LLC
Ogallala, Nebraska

Figure 2

Proposed Sample Location Map

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Date: 5/2/2017 Drawn By: Clayton Hayes Project No: X9025.17.0174.000